

# TIPS

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A newsletter of the University of California, San Diego Technology Transfer Office

## FROM THE DIRECTOR

### Time Flies ...

When you are having fun, it has now been twelve months since I exchanged the balmy weather of central Iowa for the soggy El Niño experience of southern California! In between the pounding surf and the pouring rain, the UCSD Technology Transfer Office (TTO) has begun its reorganization with the support of the Vice Chancellor - Resource Management and Planning. We hope that the new organization will allow us to better provide services in intellectual property management and education to the SD campus community, better involve our inventors in the intellectual property management process, and prepare the office for the anticipated increasing work load as the campus continues to grow. The new organization will allow us to fully implement, by the end of 1999, the five-year plan designed in late 1994 when the office was first established. It will shift our operations from an "account executive" approach to a "functional matrix" approach that will enhance team work and portfolio oversight.

### New Staff

Some personnel changes occurred along with our reorganization. Dr. Eric C. Lund joined us as a Senior Licensing Associate from the University of Illinois, Urbana-Champaign this past July. He is responsible for faculty liaison and licensing in the areas of physical sciences and engineering. Eric has a

doctoral degree in chemistry and a MBA degree. He previously was affiliated with the Washington Research Foundation in Seattle.

Ms. Linda Wang joined TTO in June as our accounting officer from Mount Sinai Medical Center in New York. She not only is responsible for collecting and counting all our "beans," she is also responsible for paying our legal bills and distributing royalties to our inventors and their academic units. If I were an inventor, I would want to know her personally. Linda has a MS in accounting and a BS in economics.

Ms. Vanessa Tollefson joined us in September as our Patent Manager from Lyon & Lyon in San Diego where she was with the litigation group. Vanessa is responsible for our patent prosecution, liaison with law firms and inventors, and review of legal bills. Vanessa has a JD and a BS in biology. She has over ten years of experience in science research and management in the biotechnology industry.

Ms. Rose Murphy was appointed Marketing & License Manager in July after spending the previous year and a half in TTO honing her skills. She is now responsible for all mass and targeted marketing efforts and for providing services to our licensees. Rose has a MBA and a BS in chemistry. She has over ten years

of experience in research and development with large, small, and startup companies.

Ms. Julie McPherson was appointed Disclosure Manager in July after three and a half years in TTO. She is now responsible for faculty liaison and the management of our growing portfolio of inventions and copyright materials. Julie has a MBA and a BA in psychobiology. She has several years of research experience in neurobiology.

Ms. Erin Dougherty joined us in October from Skywest Airlines as an administrative assistant. She is responsible for many things that make this office fly!

### Thanks & Welcome

In May, we bid good-bye to Dr. Martin Rachmeler, former director of TTO, as he embarked on his retirement. Martin graciously agreed to stay on half-time for four months to assist with licensing after my arrival in January so that I could focus on planning and smoothly implementing the reorganization in stages. Thanks are also due to Dr. Michael White, who assisted TTO from October 1997 to June of this year with our licensing efforts, and to Drs. Geert Schmid-Schoenbein (Bio-engineering), Karl Hostetler (Medicine), and William Fenical (SIO) who completed their terms serving on the UCSD Technology Transfer Advisory Committee (TTAC). TTAC welcomes

its new members, Drs. Paul Friedman (Radiology), Suresh Subramani (Biology), and Bernhard Palsson (Bioengineering) and Ms. Linda Dale (Contracts & Grants).

Alan S. Pau  
Director

### Inventor Showcase

In partnership with the UCSD CONNECT Program, TTO organized its third annual Inventors Showcase in conjunction with UCSD CONNECT's three-day Corporate Partnership Forum in November, 1998. The one-day showcase featured prominent inventors from the University of California. Inventors from UCSD included Drs. John Faulker of Scripps Institutions of Oceanography, Karl Hostetler of Medicine, Eliczer Masliah of Neurosciences and Pathology, and Theodore Page of Neurosciences. For the first time, TTO also invited and featured inventors from other UC campuses (UCI, UCB, UCLA) and DOE national laboratories (LANL).

The showcase was a smashing success with well over a hundred registrants from biotechnology and pharmaceutical companies, and representatives of the investment and legal communities attending the oral presentations and poster sessions.

I thank CONNECT for its continuing partnership with TTO and especially to directors Bill Otterson and Dr. Abby Barrow for their leadership, the law firms of Knobbe, Martens, Olson & Bear and Wilson, Sonini, Goodrich & Rosati for their sponsorship, and Ms. Grai Andreasson, Mr. Eldon Hylton and Dr. Peter Korn for their skillful volunteer work, without which the showcase would not have been possible.

### Research Support Policy Recommended by TTAC

With the new UC Patent Policy in effect last Fall (the 97 Policy), the UCSD Technology Transfer Advisory Committee was busy during the summer months formulating recommendations to the Chancellor for the San Diego campus. The 97 Policy applies only to inventions disclosed to TTO on and after October 1, 1997, while inventions disclosed earlier remain governed by the 1985 Patent Policy (the 85 Policy). Among other changes, the 97 Policy differs from the 85 Policy in (i) the manner the "net royalties" are calculated, (ii) the percent of the net royalties that are shared with the inventors, and (iii) the mandate that 15% of net royalties received from each invention be distributed to support research.

TTAC considered equity issues for inventions governed by the two policies and the different bases from which the net royalties derived. In October, 1998, TTAC recommended to the Chancellor that for inventions governed by the 85 Policy, 9% of the net royalties received from each invention should be distributed to support research. Additionally, TTAC recommended that the research fund should be distributed in a 60/40 ratio between the inventor's research laboratory and the inventor's home academic unit. Chancellor Dynes had solicited input from the campus division of the Academic Senate. It is anticipated that the recommendations, when adopted as a campus policy, will be implemented by TTO in FY99. Royalties received during FY98 that end June 30, 1998 will be the first royalties affected by the new policy.

### What Does TTO Do?

The UCSD Technology Transfer Office (TTO) is the San Diego campus office responsible for providing the campus with intellectual property management and education services.

In education, we strive to promote the general awareness of intellectual property issues throughout the campus. We provide hands-on consultations and problem-solving on a case-by-case basis by direct interactions with faculty, staff and students. The TTO staff is also available to join you in group sessions for brief presentations, and/or discussions on subject matters relating to technology transfer, intellectual property and related UC policies and campus guidelines.

In administration, we manage all new intellectual property developed at and owned by UCSD. This includes the management of all new inventions, discoveries, technologies, patents, tangible research materials, copyrights and selected trademarks associated with products of UCSD innovations. The management process is complex and we will share the various aspects of it with you in more detail in future issues of this newsletter. In the meantime, if you have any questions concerning your latest new idea, discovery, exciting experimental results, or creative work, don't hesitate to contact us by a visit, phone, FAX or email. TTO is located on the first floor of the Torrey Pines Center North. That is the building just south of Agnaron on North Torrey Pines Road. If you know how to find the Office of Contract & Grant Administration, just go one floor below and you'll find us.

We also assist and interact with the Office of Contract & Grant Administration and the Conflict of

Interest Office to address intellectual property and conflict issues that may arise in various research and material transfer arrangements. TTO actively participates in the development efforts of the various UCSD academic units and community special interest groups to promote and facilitate university - industry interactions and community and economic development. Our main goals are to ensure that UCSD innovations are used to benefit the public, and to the greatest extent possible, leverage the innovations to benefit specifically the community that UCSD belongs to and serves.

For more information concerning TTO, please visit our web page at: <http://invent.ucsd.edu/tto/invent.htm>

#### **Informational Brochures Available from TTO**

As part of TTO's education and service efforts, TTO has made available the following brochures to UCSD researchers for reference:

*Keeping Good Research Notebooks.*

*Intellectual Property Licensing.*

*Technology Transfer at UCSD.*

*An Inventor's Guide to Patents and Patenting (AUTM Educational Series No.1)*

For additional free printed copies, please contact TTO. The information, except for the last item of AUTM Educational Series material, is also available from the TTO website.

#### **Sharing Our Experience in Technology Transfer**

During the last few months, TTO was active in sharing its intellectual property management experience with

many UCSD and external groups. In June, Dr. Larry Brand, senior licensing associate, attended the Spring meeting of the Licensing Executives Society in Boston focusing on pharmaceutical licensing issues. Dr. Alan Pazu, director, was an invited speaker in October at the "Biotechnology Symposium on Innovative R&D and Program Management" organized by the Academia Sinica in Taipei, Taiwan. Earlier, Alan was a speaker on the subject of "Agricultural Trends: Policy and Breeders' Rights" during the 1998 Annual Meeting of the Association of University Technology Managers. Alan also shared his views on various technology transfer and intellectual property management topics in a Bioengineering Department seminar; a workshop on "Licensing from Universities" sponsored by Gray, Cary, Ware & Evidentrich, LLP; the "Conference on Law, Education and Public Policy" organized by National University; and a Biotechnology InCyte Breakfast forum.

TTO also shared our experience in technology transfer and other intellectual property management policies and issues with the following colleagues who visited the UCSD campus in the last few months:

Andres Font, Eisenhower Fellow (Madrid, Spain); Mark Cotichia, Director - Office of Technology Transfer (Carnegie Mellon Univ.); Tessa Nicholson, The Heinz Endowments (Pittsburgh, PA); Arthur Bursi, Director of Technology Management (Univ. Pittsburgh); Jonathan Gee, Innovations (Imperial College, UK); H. G. Thomson, Director - Research and Consultancy Services (Univ. Strathclyde, UK); Roger Baker, The Gatsby Charitable

Foundation (London, UK); Brada Betwin, Director - Strategic Analysis Division (US Dept. Commerce); Bill Wicksteed, SQW Economic Development Consultant (Cambridge, UK); Professor H.J.J. Nijkamp, Genetics (Vrije Univ., Amsterdam, The Netherlands); Professor Walter Hoogland, Science and Technology Center (Univ. Amsterdam, The Netherlands); Michiel F. van Ginkeel, The Greenery International (Hertogenbosch, The Netherlands); Gerty Holla, Advisory Council for Science and Technology Policy (The Hague, The Netherlands); Peter C. Simons, Agrotechnological Research Institute (Wageningen, The Netherlands).

We enjoyed our visitors and we learned much from them also.

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#### **TECHNOLOGY TRANSFER & ENTREPRENEURSHIP:**

##### **DNA Programs Broadly Licensed and Available**

Two computer software programs developed by Drs. Timothy Bailey and Michael Gribakov of the San Diego Supercomputer Center and Dr. Charles Elkan of Computer Science and Engineering were broadly licensed to many companies that are active in genetic discovery research. Additional licenses are still available to commercial researchers.

One software program is titled "MEME" for "Multiple Expectation Maximization for Motif Elicitation." It is a valuable tool for discovering motifs in a groups of related DNA or protein sequences.

The second software program is titled "MAST" for "Motif Alignment and Search Tool." It is a tool for searching biological sequence databases for sequences that contain one or more of



a group of known motifs.

#### **New Use for Old Drug**

A new use of the drug, thiazolidinedione and its derivatives, to prevent and delay the onset of non-insulin-dependent diabetes has been established by Dr. Jerrold Olefsky of Medicine. The Sanryo Company, Ltd. (Tokyo, Japan) has obtained exclusive rights to this UCSD technology (US Patent 5,708,012).

#### **Growing Trees in Salt Water**

An Australian company (Queensland, Australia) has successfully adopted a licensed UCSD "ion pump genetic technology" to enhance the salt tolerance of eucalyptus species. The transgenic trees can grow in a high salinity environment that normally will stunt their growth. The "ion pump" technology was developed by Dr. Julian Schroeder of Biology and should find similar applications in other plant species. The technology is available to other companies for use in other plant species.

#### **Targeting Leukemia Cells**

Immunogenex, Inc. (San Diego, CA) is a new company founded to exploit a novel gene therapy approach for treatment of chronic lymphocytic leukemia. The approach stimulates the patient's own immune system to enhance its ability to recognize and eliminate leukemic cells. The technology was developed by Dr. Thomas Kipps of Medicine and has demonstrated spectacular success in a recent patient trial. Contact: Dr. Charles Prussak, VP; or Ms. Farah Hejran, CFO (Tel: 619- 623-2754).

#### **Check Those Arterial Plaques**

A antibody-based technology for the identification of unstable arterial plaques that are likely to trigger heart attacks or strokes was developed by Dr. Joseph Witztum of Medicine. The technology is licensed to a early stage

company, AtheroGenics, Inc. (Norcross, GA), with a business focuses on atherosclerosis related treatment, prevention and diagnosis. Contact: Russ Medford, CEO (Tel: 770-447-1866).

#### **Feeling No Pain**

A new technology based on novel chemistry and receptor biology for pain control was developed by Dr. Anthony Yaksh of Anesthesiology. The technology is licensed to a biotechnology company in Malvern, PA. The company was started in 1994, based on the pain control invention of Dr. Yaksh. Its compound is already in Phase II clinical trial for pain and itch control.

#### **Spinal Cord Injury Repair**

A new gene therapy method using genetically engineered NT3 cells was developed by Dr. Mark Tuszynski of Neurosciences for the repair of spinal cord injury. The technology is licensed to a new company, Acorda Therapeutics, Inc. (New York, NY). The firm focuses on neurologic disorders. Contact: Dr. Ron Cohen, CEO (Tel: 212-376-7552).

#### **Novel Protein Kinase**

A new cytokine-responsive protein kinase, JxB3-kinase, was discovered by Dr. Michael Karin and his associates of Pharmacology. This new kinase is responsible for the activation of the NF- $\kappa$ B transcriptional factor and is licensed to a local biotechnology company.

#### **Low Cost Caching and Distribution of Programming**

HoTV, Inc. (San Diego, CA) is a new company that is working towards providing client-server technology for the creation and distribution of interactive video-based programming. The company has

exclusive rights to a UCSD technology that provides a system of "multimedia hubs" for the efficient caching and distribution of programming (US Patents 5,583,994 and 5,592,626). Rather than using the costly approach of repeated transmission of the same program over a network, this technology provides a means for determining when, where, and how long a program must be locally cached so as to service a group of users in the least expensive manner. The technology was developed by Dr. P. Vankar Rangan of Computer Science and Engineering. Contact: Gene Ferrogia, President and CEO (Tel: 619-259-1622).

#### **Molecular Motor Drives New Company**

Cytokinetics, Inc. (South San Francisco, CA), licensee of our "molecular motor target screening technology" is a new company pioneering the field of "cytoskeletal pharmacology" - an approach that has the potential to develop drugs that are more effective and with a more target specific mechanism. In addition to pharmaceuticals, the technology can be used for the development of compounds with herbicidal and insecticidal activities. The "molecular motor" technology was developed by Dr. Lawrence Goldstein of Pharmacology and his associates at UC San Francisco and Stanford. Contact: Dr. James Sabry, President and CEO (Tel: 650-324-3000).

#### **Under The Sea**

A novel discovery engine based on novel culturing and isolation technologies has been developed by Dr. William Fenical of the Scripps Institution of Oceanography. The new engine can be used to mass culture deep marine microbes that can be screened for the discovery of valuable bioactive compounds. Deep marine microbes have been separated from

their terrestrial counterparts for over 2 billion years. They have evolved different biocidal mechanisms that terrestrial organisms have not developed resistance to. The technology was licensed to the new company, Nervus Pharmaceuticals, Inc. (San Diego, CA). The company's business focus is on deep-sea natural product discovery for infection, cancer, and inflammation control and treatments. Contact: Mike Palladino, CSO (Tel: 619-677-6007)

#### Photorefractive Polymers

Lason Technologies, Inc. (Pacific Palisades, CA) and Dr. William Manner of Chemistry & Biochemistry jointly developed several photorefractive polymers that have high optical quality without degradation due to crystallization. The materials will find applications as adaptive beam splitters to allow detection of ultrasonic phase and amplitude distortions. The company is developing non-destructive ultrasound testing products incorporating these new materials. Contact: Marvin Klein (Tel: 310-216-4046)

#### Rapid Diagnosis of Infection

A modified DNA hybridization reagent that emits fluorescent light in response to the excitation wavelength which, in turn, is determined by the nature of the DNA that binds to it has been developed by Dr. Yitzhak Zor for the rapid detection of different species of bacteria and viruses. The technology is licensed to a new company, Clinical Micro Sensors, Inc. (Pasadena, CA), which focuses on diagnostic technologies and novel assay reagents. Contact: Joe Karyem, CEO (Tel: 626-584-5900)

#### Cystic Fibrosis Treatment

A new approach to the treatment of cystic fibrosis has been licensed to Inologic, Inc. (Seattle, WA). The

technology, developed by Drs. Alexei Trofimov-Kaplan and Carmen Schultz of Medicine, augments secretion through a group of chloride channels that are not defective in CF patients. By increasing the flow in this different group of channels, the cause of viscous mucous secretions may be alleviated. Contact: Inologic, Inc. (Tel: 425-831-8312)

#### New Cellular System

A new cellular wireless communication system for high capacity radio access that can greatly reduce the reliance on buried cable and the costs associated with it has been developed by Dr. Anthony Acampora of Computer & Electrical Engineering and the Center for Wireless Communications. The technology is licensed and optioned to several companies, including one new company, AirFiber, Inc., of San Diego. The invention improves the cellular systems for the industry and has additional applications. AirFiber Contact: Jim Dunn, CEO (Tel: 619-792-8501)

### NEW US PATENTS ISSUED:

The following selected US patents were issued to UCSD inventions since June, 1998. Patents with (\*) are currently still available for licensing for commercial uses. Interested parties should contact TFO.

#### Finding Oil Undersea

US Patent No. 5,770,945 describes a "Seafloor magnetotelluric system and method for oil exploration" that can be used for surveying and mapping the seafloor for that purpose. The system was developed by Dr. Steven Constable of Institute of Geophysics and Planetary Physics and is licensed to AGA Geophysics,

Inc. (Austin, TX). Contact: Arnold Orange, CEO (Tel: 512-358-9733)

#### Matching Protein Partners\*

US Patent No. 5,776,689 is titled "Protein recruitment system" and describes an *in vivo* system for identifying proteins that interact with a target protein. The system can be used for screening drugs. The protein recruitment system was developed by Drs. Michael Karin and Ami Aronheim of Pharmacology. Research reagents and kits can be obtained from Strategene (La Jolla, CA) at 619-535-5400.

#### Helping Blood Vessels\*

US Patent 5,792,453 describes methods for "Gene transfer-mediated angiogenesis therapy" that can be used for stimulating coronary collateral vessel development or for stimulating vessel development in patients with peripheral-deficient vascular diseases. A single injection of the transgene-inserted, replication-deficient adenovirus vector is effective. The methods were developed by Drs. H. Kirk Hammond, Frank Giordano, and Wolfgang Dillman of Medicine.

#### Suppressing Cell Surface Receptors\*

US Patent 5,806,412 describes the "Nucleic acids encoding sorting nexins and methods of using same" to effectively down regulate the expression of receptors on cell surface. Receptors are also translocated to the lysosomes of the cells. The system was developed by Drs. Gordon Gill, Richard Kurten and Deborah Cadena of Medicine.

#### Everything Cauliflower\*

US Patent 5,811,536 titled "Cauliflower floral meristem identity genes and methods of using same" describes genes that are useful in converting shoot meristem to floral meristem and for promoting early

flowering in angiosperm species. The genes and the method of using them were discovered by Dr. Martin Yanofsky of Biology.

**Blood Product for Enhanced Oxygen Delivery**

US Patent 5,814,600 describes the "Methods and compositions for optimization of oxygen transport by cell-free system" that are useful for enhancing the delivery of oxygen to tissues of mammals. The system generally comprises an hemoglobin-based oxygen carrying component and a non-oxygen carrying component that renders the composition a high oncotic pressure and viscosity. The new blood product technology was developed by Dr. Robert Winslow of Medicine and Dr. Marcos Intaglietta of Bioengineering.

**Making Neurotoxins Useful\***

US Patent 5,837,265 describes

compositions of "Chemically-modified Clostridiotoxin with improved properties" related to its thermal stability and proteolytic activities. The improved neurotoxins can enhance the properties of pharmaceutical compositions and is achieved through either phosphorylation or sulfation to introduce a negative charge. The new method and improved toxins were developed by Drs. Mauricio Montal and Antonio Ferrer-Montiel of Biology.

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This newsletter is published twice a year by the UCSD Technology Transfer Office for the UCSD community and its industrial partners.

**UCSD Technology Transfer Office**  
9500 Gilman Drive  
La Jolla, CA 92093-0910

**Director**

Dr. Alan Pau

**Accounting**

Linda Wang

**Senior Licensing Officers**

Dr. Larry Brand

Dr. Eric Lund

Robert Yoshida

**Patent Manager**

Vanessa Tollefson

**Marketing & License Manager**

Rose Murphy

**Disclosure Manager**

Jule McPherson

Please refer questions & suggestions to UCSD TTO

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10300 North Torrey Pines Road,  
Torrey Pines Center North, 1st Fl.,  
La Jolla, CA 92093, Mail Code 0910.

Tel 619-534-5815

FAX 619-534-7345

E-mail [apau@ucsd.edu](mailto:apau@ucsd.edu)

